Positive Psychology in Cancer Care

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Published in:
Annals of Behavioral Medicine

DOI:
10.1007/s12160-009-9154-z

Publication date:
2010

ann. behav. med.
DOI 10.1007/s12160-010-9157-9

ORIGINAL ARTICLE

Positive Psychology in Cancer Care: A Story Line Resistant to Evidence

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Abstract
Background Aspinwall and Tedeschi (Ann Behav Med, 2010) summarize evidence they view as supporting links between positive psychological states, including sense of coherence (SOC) and optimism and health outcomes, and they refer to persistent assumptions that interfere with understanding how positive states predict health.
Purpose We critically evaluate Aspinwall and Tedeschi's assertions.
Methods We examine evidence related to SOC and optimism in relation to physical health, and revisit proposed processes linking positive psychological states to health outcomes, particularly via the immune system in cancer.
Results Aspinwall and Tedeschi's assumptions regarding SOC and optimism are at odds with available evidence. Proposed pathways between positive psychological states and cancer outcomes are not supported by existing data. Aspinwall and Tedeschi's portrayal of persistent interfering assumptions echoes a disregard of precedent in the broader positive psychology literature.
Conclusion Positive psychology's interpretations of the literature regarding positive psychological states and cancer outcomes represent a self-perpetuating story line without empirical support.

Keywords Positive psychology · Cancer · Immune functioning · Optimism · Sense of coherence

Introduction

We appreciated the willingness of Lisa Aspinwall and Richard Tedeschi [1] to debate applications of positive psychology to cancer. Aspinwall and Tedeschi espouse values that we consider vitally important to sustaining this debate and to reconciling the claims of positive psychology with a wealth of available evidence. We agree with their position that investigators and theorists should not conceptualize "variables that have a 'positive flavor' as contained within something called positive psychology" (in this issue; quotation marks in original) and that, "[i]f we divide the world into positive psychology and not" (in this issue), we create barriers to discovery. Yet, we wonder how Aspinwall and Tedeschi's clarion call can be reconciled with positive psychology's "manifesto" [2], and with its "declaration of independence" [3], coupled with adherents of positive psychology regularly referring to it as a "movement," as well as with the many volumes with titles that include the positive psychology rubric in which constructs studied long before the "movement" began are appropriated for the very purpose of containing them within something called positive psychology.

Critical discussions of the potential contributions of a positive psychology have been hampered by the sloganeering of the leaders of the movement and their labeling of

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Published online: 26 February 2010

the alternative as a "negative psychology" [4], and particularly within cancer care, the alternative to optimism as being pessimism. As Barbara Ehrenreich has repeatedly cautioned us,

> When it comes to how we think, "negative" is not the only alternative to "positive." As the case histories of depressives show, consistent pessimism can be just as baseless and deluded as its opposite. The alternative to both is realism—seeing the risks, having the courage to bear bad news and being prepared for famine as well as plenty. We ought to give it a try [5].

We agree with Aspinwall and Tedeschi's concern about the dangers of popular versions of positive psychology with its

> ...seemingly relentless emphasis on mandating optimism, individual happiness, and personal growth no matter the circumstances, is that the general public may come to believe that one can conquer cancer by thinking positively, and that if one is not getting a good response, one is not thinking positively enough, not laughing enough, or not being spiritual enough (in this issue).

We applaud Aspinwall and Tedeschi's [1] apt condemnation of "saccharine terrorism, victim-blaming, and the promotion of mindless versions of positive thinking for personal gain" (in this issue), yet, we wonder how this is to be reconciled with the marketing of positive psychology by the leaders of the movement who nonetheless claim a grounding in scientific evidence. The ridiculing of pessimists as losers in positive psychology self-help books [4], money back guarantees on websites offering personal coaches and self-help techniques claiming to promote happiness, and the presentation of pseudoscientific happiness regression equations $(H = S + C + V$ [Happiness = your Set range + the Circumstances of your life + the factors under your Voluntary control]) [4] all seem appropriate targets of Aspinwall and Tedeschi's condemnation and suggest that, while the leaders of positive psychology claim it to be science based, they feel free to deliver platonic noble lies to the unwashed masses [6]. Perhaps, we need a sharper distinction between the scientific research program of positive psychology versus positive psychology as a social movement with a closely associated marketing of self-help materials, personal coaching, and training programs to the lay public, industry, and the military [7, 8]. Scientific research programs require adherence to standards of evidence that inevitably conflict with what best serves social movements and marketing. Moreover, leaders of positive psychology as a research paradigm substantially overlap with its leaders as a commercialized social movement, and so, outsiders are left not knowing which standards to apply to their pronouncements.

Most importantly, however, Aspinwall and Tedeschi failed to confront directly the many negative consequences of applying positive psychology to persons with cancer, the key issue that inspired the original debate held at the Society of Behavioral Medicine Annual Meeting in 2007. To their credit, they declare at the outset opposition to "popular views of positive thinking, such as its promotion as a cure for cancer and other diseases." Later, they concede that the evidence is weaker or nonexistent that positive psychological states affect progression of cancer or length of survival time. We heartily agree. Yet, in condemning "saccharine terrorism," Aspinwall and Tedeschi fail to note that support for such victim blaming can come not only from the fringe, but from mainstream positive psychology. Anyone who doubts this need only to Google "positive psychology" and "coaching" and experiment by adding some names of proponents of mainstream positive psychology. They will soon be brought to websites with claims that retaining a personal coach or engaging in web-based exercises for a substantial fee is guaranteed to instill happiness that lasts and that happiness is related to better health. More efficiently, the skeptical reader can reach websites with similar claims by simply joining the American Psychological Association listserv Friends of Positive Psychology that describes itself as devoted to the "discussion of positive psychology in research and practice" [9] and by double clicking on the web links provided in the signatures of posters there. The struggling cancer patient is misled and understandably confused by such claims. More troubling, Aspinwall and Tedeschi uncritically endorse as promising the links being drawn between participation in group interventions for cancer patients and improved immune functioning. In our previous paper [10], we examined how unsubstantiated and even implausible the causal links are that are claimed between changes in the measures of immune functioning used in these studies and progression and outcome of cancer. Yet, these claims are directly marketed to cancer patients in press releases from investigators ("Intervention program boosts survival in breast cancer patients" [11]), despite careful analyses showing that the interventions are ineffective in affecting recurrence or survival [12].

We had sincerely hoped that Aspinwall and Tedeschi would blindside us with contrary evidence to what we had presented. We had carefully documented major conceptual and methodological barriers to the establishment of unambiguous causal links between such concepts and health, but we did not see Aspinwall and Tedeschi countering any of these challenges or even acknowledging them, despite citing some of the same sources on which we drew for our critique [13].

"Pervasive and Limiting Assumptions" and Historical Precedent in Positive Psychology

Aspinwall and Tedeschi [1] refer to "pervasive and limiting assumptions" that interfere with understanding the role of positive psychological experiences in health and illness. These unhelpful assumptions, such as that positive and negative thoughts and feelings cannot coexist, that they have symmetrical and opposite effects, and that positive thoughts and feelings are pleasant but trivial, are apparently just now being brought to light, and one might conclude from Aspinwall and Tedeschi's description that positive psychology is removing the veil of ignorance from those of us immersed in the "negative psychology" enterprise. Yet, the historical record suggests otherwise.

The history of "negative psychology" makes it difficult to believe that its adherents maintain a pervasive assumption that positive and negative thoughts and feelings cannot coexist or that positive thoughts and feelings are trivial. Sixty years ago, Melanie Klein [14] referred to the capacity to experience simultaneous positive and negative emotions toward the same person as a developmental milestone and an indicator of emotional maturity. Thirty five years ago, Winnicott [15] referred to the experience of simultaneous positive and negative thoughts and feelings toward another person as "an achievement" (p. 262). In the same year, Kernberg [16] underscored how well functioning individuals have the capacity to integrate positive and negative aspects of themselves and others. Remarkably, the insights of Klein, Winnicott, and Kernberg (and many others including Elizabeth Zetzel, Edith Jacobson, and Heinz Hartmann) regarding the inherent connections between positive and negative emotions, states of mind, and self-images emerged in the context of clinical practice and the study of psychopathology.

These theorists' ubiquitous influence on social and behavioral sciences and the humanities and on Western culture makes it difficult to imagine how the assumptions described by Aspinwall and Tedeschi [1] could take hold, let alone become pervasive. These widely known theorists have had a profound influence on educators, clinicians, philosophers, literary and cultural critics, and also the way parents and researchers think about children. In view of their prominent and lasting contributions to our current understanding of the significance of positive thoughts and feelings and the relationship of positive and negative states of mind, their absence from Aspinwall and Tedeschi's extended discussion of these issues warrants analysis.

One possible explanation for Aspinwall and Tedeschi's exclusion of major precedents to positive psychology's position regarding positive thoughts and feelings is that the past no longer plays a significant role in the scientific imagination [17]. Another potential explanation is found in positive psychology's particular penchant for historical revisionism, which has not gone unnoticed (e.g., [18–20]). We believe that positive psychology's persistent refusal to seek and embrace precedent, except at the most superficial level, is captured in Aspinwall and Tedeschi's analysis of "persistent and limiting assumptions" and reflects an attitude with significant implications for how positive psychology approaches its mission. Aspinwall and Tedeschi's exclusion of major precedents to positive psychology's view of positive thoughts and feelings is not an isolated oversight. Rather, it reflects a persistent tendency—the same tendency that has prevented positive psychology adherents from considering the vast evidence cited by Coyne and Tennen [10] (see also [21]) demonstrating that positive psychology's view of benefit finding is speculative, that current indicators of posttraumatic growth are almost certainly invalid, and the implausibility of claims that interventions that enhance benefit finding improve the prognosis of cancer patients by strengthening the immune system. Indeed, virtually, every criticism of positive psychology offered by Coyne and Tennen can be traced directly to the pervasive albeit implicit belief among many positive psychology adherents that precedent, especially precedent from "negative social science" is irrelevant. In the absence of a concerted effort among adherents, and especially from its leadership, this recurrent disregard of precedent threatens to undermine positive psychology and become one of its unintended legacies.

Sense of Coherence and Optimism in Positive Psychology

Because the topics of benefit finding and posttraumatic growth were addressed in both Aspinwall and Tedeschi [1] and our article [10], these concepts provide the greatest opportunity to compare and contrast our positions, and we invite readers to try to reconcile our sharply differing positions. Yet, we were surprised that Aspinwall and Tedeschi chose additionally to single out SOC and optimism as positive psychology-tinged concepts with robust associations to health. Our assessment of SOC is that it is mainly of historical interest, except as it points to likely bumps in the road for research with other key concepts of positive psychology. The concept of optimism, while still enjoying considerable well-deserved attention because of its established links to emotional well-being and health behaviors, falls prey to the conceptual and methodological issues we raised in our paper more generally about establishing unambiguous, clinically useful causal associations between psychological states and physical health (see also [13]). Moreover, with optimism construed as a stable, relatively immutable trait, it is not at all clear how it is relevant to intervention, except perhaps as a plausible, but

generally untested moderator variable to be taken into account in tailoring interventions.

Sense of Coherence

The study of SOC started with great promise, but ultimately yielded few unambiguous connections with physical health, particularly as assessed by objective rather than subjective indicators. A few studies reported associations between SOC and objective health indicators [22–24]. However, substantive interpretations of these findings have been challenged on conceptual [25] and methodological grounds [26]. Namely, the three item SOC measure used in the Surtees et al. study [22] was unreliable and only modestly related to longer measures of SOC [27]. Moreover, the measure was confounded with baseline health and environmentally provided social resources. Even subscales of the longer versions of the scale are correlated with measures of depression and anxiety as much as their respective reliabilities allow [27]. In studies drawing on the same dataset, one reported a significant association between SOC and cancer incidence at 8-year follow-up but not at 12-year follow-up [23]; while another reported a link between SOC and risk of external injuries [24]. No plausible underlying mechanism can link SOC to both incidence of cancer and external injuries, but not other physical health outcomes, and so both associations may be spurious, and as MacLeod et al. [26] suggested, simply due to the use of imprecise measures of potential confounders, limiting statistical adjustment. A negative assessment of the predictive value of SOC for health was further confirmed in a systematic review [28]. Overall, questions have been raised regarding whether existing measures correspond well to Antonovsky's original theoretical description of SOC, whether any association with physical health might represent reverse causality [29] and whether, given the strong negative correlations between SOC and measures of depression and anxiety, SOC merely represents "negative psychology" turned on its head. Notably missing in this literature is any examination of whether baseline physical health predicts subsequent SOC, independent of baseline SOC, although some data sets would seem to allow this association to be tested.

Optimism

Aspinwall and Tedeschi discuss the association between optimism and health in two noncontiguous paragraphs. In the first paragraph, they cite a study of optimism and survival in head and neck cancer in support of an association between optimism and survival [30]. Yet, in the second paragraph, they note that associations between optimism and cancer mortality are more generally weak or nonsignificant. Examining the study of head and neck cancer patients, we note that it was a small, underpowered investigation (45 deaths being explained), the lower limit of the confidence interval barely excluded 1.0 (confidence interval=1.01−1.24), and even this effect depended upon multivariate analyses inappropriate for such a small number of deaths being explained.

We can underscore that the association between positive psychological traits and states and cancer incidence or mortality is small or nonexistent with references to recent studies. A well-controlled study of the survival of head and neck patients with an ample number of deaths being explained, 646, found no evidence of an association between emotional well-being and survival in simple or multivariate analyses, despite an exhaustive search for main or interaction effects [31]. Tindle et al. [32] examined mortality in a Women's Health Initiative cohort of 97,253 women, 7,994 of them African-American. Optimism did not predict cancer-related mortality in the full sample or among white women, but it did predict cancer-related mortality among African-American women. We might be tempted to single out the apparent positive finding for African-American women, but then, we must ask what a priori explanation is there for the association not holding for white women or the full sample, but only for African-Americans? Moreover, mortality was more related to a full range of background factors and strongly related to depressive symptoms. Risk factors other than optimism were entered as statistical controls for the prediction of cancer-related mortality by optimism, but the categorization of these variables for entry into the multivariate proportional hazards was crude, and still allowed for residual confounding (for a discussion of this issue, see our earlier paper [10] as well as the humorous, but insightful article by Davey Smith and Ebrahim [33]). Finally, given the strong negative association between optimism and depressive symptoms, it is not clear whether the prediction of mortality from depressive symptoms controlling for optimism would not have been stronger than the investigators' preferred prediction of mortality from optimism controlling for depressive symptoms.

Aspinwall and Tedeschi dismiss the possibility that the relation between positive states and health outcomes can be explained by the "detrimental effects of either pessimistic expectations or state or trait forms of negative affect, such as distress, depression, or anger" (in this issue). They cite a recent systematic review and meta-analysis of the association between optimism and physical health [34]. Yet, in this review, Rasmussen et al. actually found that pessimism predicted health outcomes as well as or better than optimism, raising questions as to why optimism should be favored.

Aspinwall and Tedeschi indicate that even if an association between positive thoughts and feelings and mortality cannot be demonstrated for cancer, it has been established for

cardiovascular disease and cite a recent comprehensive review and meta-analysis by Chida and Steptoe [35]. At first glance, the review does indeed give that impression, and so deserves a closer look. For cardiac mortality occurring in nonpatient samples, Chida and Steptoe included six effect sizes (see their Table 1), but two came from the same study, violating basic assumptions of meta-analysis. Chida and Steptoe also found overall highly significant statistical heterogeneity in the effect sizes of the studies included in their analyses of nonpatient samples and significant publication bias. Examining their Fig. 2, it is clear that the statistical heterogeneity comes largely from a strong publication bias, whereby published small, underpowered studies nonetheless yield larger effect sizes than larger studies. Indeed, none of the larger studies produced a significant association between positive psychological variables and cardiac mortality. For persons already diagnosed with cardiac disease, the picture is confusing (their Table 2): there are five effect sizes entered into the meta-analysis, two from the same study, and of the five, two are not significant, one is significant in the right direction, but two are significant in the wrong direction, with higher scores on positive well-being associated with greater mortality.

No doubt that associations between positive psychology variables and reduced cardiac mortality can sometimes be found in some studies, as in the Women's Health Initiative for white women, but not in the sample of 7,994 African-American women [32]. Note the contradiction of these findings with the ones obtained for cancer in the same sample. Yet, overall, the association has a will-o'-the-wisp quality, leaving "serious conceptual and methodological reservations" [13, p. 960] about any substantive interpretations, and little obvious public health or clinical implications. Moreover, as Chida and Steptoe [35] indicate, there is a significant publication bias in favor of positive findings, and a perusal of the positive psychology and health literature indicates a persistent amplification of any signals of an association. Why has so much importance been attached to demonstrating that optimism predicts health and mortality? Such claims have taken on an ideological importance and are resistant to null and inconsistent findings. The notion that being optimistic improves health is invoked in promoting positive psychology intervention research and in the marketing of positive psychology as a commercial enterprise, even if, ironically, optimism is theoretically a relatively immutable trait.

Linking Positive Psychological States to the Physical Health Outcomes of Cancer

Aspinwall and Tedeschi [1] cite direct links between positive psychological states and physiological processes and especially the immune system in cancer. We find this unfortunate and counter to best evidence. As we reviewed in our opening paper [10], existing data support even less of a role for stress, social support, and positive psychological states in the progression and outcome of cancer than for other chronic and life-threatening conditions. As we also reviewed, there is no evidence that attitude or personality matter for the outcome of cancer or that psychosocial interventions can improve survival. Claims about links between positive psychological states and progression and outcome of cancer depend on unproven and dubious causal links between the parameters of the immune system studied in psychoneuroimmunology (PNI) and biomedical outcomes [10].

Aspinwall and Tedeschi and others in positive psychology seem not to see through a substantial confirmatory bias in this literature. As long as results can be published in high impact journals with no a priori hypotheses, and investigators can emphasize whatever significant effects can be gleaned from a full range of biological assessments chosen on the basis of convenience and not demonstrated clinical relevance; and as long as null findings or contradictions by past research are ignored, the literature concerning PNI functioning can continue to convey illusions of promise and scientific progress in combating cancer. Yet, the likelihood is low of a yield in psychological interventions improving patient survival. For instance, survival rates for early breast cancer patients under conditions of standard care are so high that it would be difficult to demonstrate a clinically significant improvement without a powerful treatment and a sample size of thousands [36, 37]. On the other hand, survival rates for metastatic cancer remain low and relatively resistant to change over decades [38]. In neither patient population does the strength of existing findings, coupled with a lack of demonstration of a possible mechanism of effect justify the commitment of resources to large-scale studies [39].

Bringing Evidence to Bear on Story Lines About Positive Psychology and Cancer: And Why Cancer?

Positive psychology offers what at first appears to be testable hypotheses about positive psychological states and cancer: that cancer can be influenced by an attitude of fighting spirit, positive coping and positive expression of feelings, optimism, and social support and that psychological interventions influence biomedical outcomes in cancer via strengthening the immune system. Yet, as indicated by a close look at the articles cited by Aspinwall and Tedeschi and elsewhere, these assertions are quite resistant to evidence and function more like story lines of a movement [40], not falsifiable hypotheses. As seen in their resistance to data, story lines are oversimplifying: regardless of data to the contrary they are preserved intact for application in persistent advocacy for

particular policies and practices. Story lines become self-perpetuating, confronting new data with a strong confirmatory bias, exaggerating the consistency of any new data with the storyline, and keeping out potentially disconfirming data. Story lines often have the quality of a promissory note preserved in a time capsule, having given favorable data more credence than is yet justified while uninfluenced by the weight of subsequent accumulating evidence.

It is noteworthy that, within positive psychology, there is so little acknowledgment of the fundamental issues we have raised here and in our first paper, and besides this exchange with Aspinwall and Tedeschi, there is so little debate within positive psychology or with its critics and skeptics. If appeals to scientific evidence are to continue to be made, it is high time that there be wider acknowledgment of (a) the lack of evidence connecting positive psychological states to the biology of cancer, (b) acknowledgment of the consistent evidence that psychological interventions do not prolong survival, and (c) that any causal links remain to be established between the parameters of immune function studied in relation to positive psychological states and psychological interventions.

In important respects, it is odd that positive psychology as applied to health and illness has become so focused on cancer. Evidence is weakest for any link between personality, stress, or positive psychological factors and biological parameters of cancer, relative to other chronic diseases. In terms of the adaptational value of fighting spirit and existential courage, heart failure would seem a better candidate than breast cancer. Women who are diagnosed with chronic heart failure on average face shorter life expectancy, more rapidly increasing disease burden and a steeper decline in quality of life than women diagnosed with breast cancer. The regimen for managing heart failure is much more intrusive and complex and unforgiving of noncompliance. Management indeed represents a struggle in which despair has negative consequences: a single act of dietary noncompliance carrying the possibility of a trip to the emergency room or death. Yet, we are unaware of exhortations to women with heart failure to adopt a fighting spirit paralleling the pressures on breast cancer patients or a sense that the survival of these women is heroic in the same way that the survival of breast cancer patients is portrayed. We are not encouraging burdening women with heart failure with demands for positive thinking as women with breast cancer have been, but we do suggest that perhaps heart failure is a better focus than cancer.

Positive Psychology or a Diversified Human Psychology of Cancer?

Although we agree with Aspinwall and Tedeschi that academic positive psychology should not have to shoulder the blame for cultural phenomena such as The Secret, there are some negative consequences of positive psychology to be owned. Persons who have been diagnosed with cancer often provide poignant accounts of pressures to be positive lest they risk decreasing their chances of survival [41, 42]. Positive psychology needs to shoulder some of the blame for claiming to offer scientific evidence that attitude and strength of character matter for the physical health outcomes of cancer.

Any psychology of cancer needs to acknowledge greater diversity in the experience of the disease and in the forms adaptive coping can take. Chronic distress and clinical depression in the face of cancer require empirically based intervention, but there is need for a balancing recognition that transient periods of distress and despair are normative and for many persons, may be a necessary part of positive adaptation to the cancer experience. Acceptance of diversity in human response to cancer allows room for the iconic image of Lance Armstrong as a heroic cancer survivor who declares that cancer made him a better person. But it also allows for the alternative image provided by Olympic gold medal winner Maarten Van der Weijden. The Dutch swimmer requests that no one confuse him with Lance Armstrong. And he adds "Armstrong describes his battle, how he was fighting, how he felt that he expelled the cancer cells from his body. What he basically says is that it is your own fault when you don't make it. That you didn't fight hard enough" said van der Weijden. "When my cancer was diagnosed, I laid down in the hospital and simply surrendered to the doctors. You always hear those stories that you have to think positively, that you have to fight to survive. This can be a great burden for patients. It has never been proven that you can cure from cancer by thinking positively or by fighting" [43].

Conclusion

We reiterate our appreciation of Aspinwall and Tedeschi's willingness to engage in this debate. We began preparation for this debate with a certain degree of skepticism about the claims of positive psychology, honed by previous close readings of these claims and their discrepancy with available data [12, 39]. We found in Aspinwall and Tedeschi's first article [1] an unusual degree of acknowledgement of some of these discrepancies, especially compared to how the data are presented in the broader literature concerning positive psychology and health. Where we took issue with Aspinwall and Tedeschi was mainly with their uncritical acceptance of the claims made in the literature, which we have shown to be biased in publication of positive findings, regardless of the quality of studies, biased in its portrayal of findings in subsequent publications, and exclusion of null and negative findings. Taken together, our earlier paper and this rebuttal demonstrate a strong need for a close reading of the literature

concerning positive psychology and health with skepticism and a willingness to go and search for evidence available elsewhere but excluded from the positive psychology literature. We agree with Aspinwall and Tedeschi's call for adherents of positive psychology testing their claims in debates with skeptics. But we think it is more important that the "movement" internally tolerate more dissent and struggle more with evidence seemingly in conflict with its claims. The dominant approach to evidence has been to find whatever fits with the needs of the movement, regardless of the evidence's quality or the availability of discrepant data. We believe that preservation of the scientific integrity and basic credibility of positive psychology, especially its applications to persons with cancer, depends on it shifting from seeking all the evidence that fits its message to adopting more sophisticated search, evaluation, integration, and interpretation strategies consistent with a "best evidence" perspective.

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